

IN THE CLAIMS:

Please cancel claims 1-21 without prejudice or disclaimer, and substitute new Claims 22-42 therefor as follows:

Claims 1-21 (Cancelled).

22. (New) A modular expandable apparatus comprising at least one base module, the base module comprising:

a broad-band data communication device for handling communications with an external data communication network through a broad-band data communication channel;

at least one local network port for the connection to a local data communication network;

a local network interface device adapted to handle communications with the local data communication network and coupled to the local network port through a local network communication bus, the local network interface having a media independent interface and a disable input;

a data processing unit interacting with the broad-band data communication device and interacting with the local network interface device through a media independent interface bus connected to the media independent interface thereof, for enabling intercommunication between the local network and the external network;

a disable signal line coupled to the disable input of the local network device and adapted to drive the local network interface device into a disabled state in which the

local network interface device does not engage the media independent interface bus and the local network port; and

an expansion bus allowing expandability of the apparatus connecting at least one expansion module to the base module, the expansion bus comprising the media independent interface bus, the local network communication bus and the disable signal line.

23. (New) The modular expandable apparatus of claim 22, wherein the local network is an Ethernet network, and the local network interface device comprises an Ethernet physical layer transceiver.

24. (New) The modular expandable apparatus of claim 22, wherein the broad-band data communication device is an xDSL data communication device.

25. (New) The modular expandable apparatus of claim 24, wherein the broad-band data communication device is implemented by the data processing unit.

26. (New) The modular expandable apparatus of claim 22, wherein the base module further comprises a data processing unit bus connected to the data processing unit, the base module being part of the expansion bus.

27. (New) The Modular expandable apparatus of claim 26, wherein the base module comprises at least one expansion connector connected and allowing access to the expansion bus.

28. (New) The modular expandable apparatus of claim 27, comprising at least one expansion module, the expansion module comprising at least one input expansion connector matching the expansion connector of the base module.

29. (New) The modular expandable apparatus of claim 28, wherein the at least one expansion module further comprises an output expansion connector matching the input expansion connector.

30. (New) The modular expandable apparatus of claim 29, wherein the data processing unit bus, the media independent interface bus, the local network communication bus and the disable line is propagated from the input expansion connector to the output expansion connector of the expansion module.

31. (New) The modular expandable apparatus of claim 29, wherein the data processing unit bus is propagated from the input expansion connector to the output expansion connector of the expansion module, while the media independent interface bus, the local network communication bus and the disable line are not propagated to the output expansion connector.

32. (New) The modular expandable apparatus of claim 31, wherein the at least one expansion module comprises an expansion module including an Ethernet switch.

33. (New) The modular expandable apparatus of claim 32, wherein the Ethernet switch comprises a media independent interface which, when the input expansion connector of the expansion module is connected to an expansion connector of the base module, interacts with the data processing unit through the media independent interface bus of the expansion bus.

34. (New) The modular expandable apparatus of claim 33, wherein the expansion module drives the disable line to a disable state for disabling the local network interface device of the base module.

35. (New) The modular expandable apparatus of claim 34, wherein the Ethernet switch comprises:

at least one first Ethernet port connected to a respective local network connector through a respective first local network communication bus;

a second Ethernet port connected through a second local network communication bus to the input expansion connector, for the connection to the local network communication bus of the expansion bus; and

a third Ethernet port connected through a third local network communication bus to the output expansion connector.

36. (New) The modular expandable apparatus of claim 32, wherein the Ethernet switch includes at least one optical Ethernet port connected through a respective optical Ethernet communication bus to an optical transceiver of the expansion module.

37. (New) The modular expandable apparatus of claim 29, wherein the at least one expansion module comprises a wireless local area network expansion module.

38. (New) The modular expandable apparatus of claim 29, wherein the at least one expansion module comprises a power line transmission expansion module adapted to allow communication over an AC power line.

39. (New) The modular expandable apparatus of claim 28, wherein the base module comprises a power supply input for receiving an unregulated power supply, and at least one first power supply regulator for generating a first regulated power supply from the unregulated power supply, the first regulated power supply supplying the data processing unit and the local network interface device, and in which the expansion bus comprises unregulated power supply distribution lines, the at least one expansion module comprising at least one respective second power supply regulator generating a second regulated power supply from the unregulated power supply.

40. (New) A method of expanding a modular apparatus adapted to allow intercommunication between a local data communication network and an external data communication network, the modular apparatus comprising a base module comprising:

- a broad-band data communication device for handling communications with the external data communication network through a broad-band data communication channel;
- at least one local network port for the connection to a local data communication network;
- a local network interface device adapted to handle communications with the local data communication network and coupled to the local network port, the local network interface device having a media independent interface; and
- a data processing unit interacting with the broad-band data communication device and interacting with the media independent interface of the local network interface device for enabling intercommunication between the local network and the external network,

the method comprising:

- coupling to the base module at least one expansion module including at least one expansion local network port for connection to the local data communication network, and an expansion local network interface device coupled to the expansion local network ports and having a media independent interface;
- disabling the local network interface device of the base module;

controlling the expansion local network interface device by means of the data processing unit of the base module through the media independent interface of the expansion local network interface device; and

coupling the at least one local network port of the base module to the expansion local network interface device.

41. (New) An expansion module for the modular expandable apparatus of claim 22, comprising:

an expansion local network interface device adapted to handle communications with the local data communication network, the expansion local network interface device having an expansion media independent interface;

an expansion media independent interface bus connected to the expansion media independent interface;

an expansion local network communication bus connected to the expansion local network interface device; and

an expansion bus connection scheme for the connection of the expansion module to the expansion bus, the expansion bus connection scheme being adapted to:

connect the expansion media independent interface bus to the media independent interface bus of the expansion bus;

connect the expansion local network communication bus to the local network communication bus of the expansion bus; and

drive the disable signal line of the expansion bus to a state corresponding to a disabled state of the local network interface device.

PATENT
Customer No. 22,852
Attorney Docket No. 05788. 0370

42. (New) A local communication network allowing user appliances to interconnect, comprising a modular expandable apparatus according to claim 22.